

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with E.E. "Jack" Richards, II on 10/7/09.

The application has been amended as follows:

Claim 1: A method comprising:

merging .text, .data, and .rdata sections, each including a header, from an object file into one new section of a firmware module, wherein (a) the new section includes a first name, data, executable code, and no more than a single header and (b) the firmware module follows a portable executable (PE) format having subdivisions that include an MS-DOS header;

renaming the new section to a second name that contains fewer unique characters than the first name;

storing the firmware module in memory, wherein the stored module includes the new section, another section including relocation information, and no additional section; and

Art Unit: 2193

flattening the firmware module by replacing existing content within at least one field within the MS-DOS header of the firmware module with fill data that is more compressible than the existing content.

Claim 12: A program product comprising:

a machine accessible storage medium; and

instructions encoded in the machine accessible medium, wherein the instructions, when executed by a processing system, cause the processing system to perform operations comprising:

merging .text, .data, and .rdata sections, each including a header, from an object file into one new section of a firmware module, wherein (a) the new section includes a first name, data, executable code, and no more than a single header and (b) the firmware module follows a portable executable (PE) format having subdivisions that include an MS-DOS header;

renaming the new section to a second name that contains fewer unique characters than the first name;

accessing the firmware module within the processing system; and

flattening the firmware module by replacing existing content within at least one field within the MS-DOS header of the firmware module with fill data that is more compressible than the existing content.

Art Unit: 2193

Claim 18: A processing system with resources for flattening a firmware module, the processing system comprising:

a processor;

memory communicatively coupled to the processor; and

instructions stored in the memory, wherein the instructions, when executed by the processor, cause the processing system to perform operations comprising:

merging .text, .data, and .rdata ~~two~~ sections, each including a header, from an object file into one new section of a firmware module, wherein (a) the new section includes a first name, data, executable code, and no more than a single header and (b) the firmware module follows a portable executable (PE) format having subdivisions that include an MS-DOS header;

renaming the new section to a second name that contains fewer unique characters than the first name;

accessing the firmware module within the processing system; and

flattening the firmware module by replacing existing content within at least one field within the MS-DOS header of the firmware module with fill data that is more compressible than the existing content.

Claim 24: An apparatus comprising:

a machine accessible storage medium; and

Art Unit: 2193

a firmware module encoded in the machine accessible medium, the firmware module having a portable executable (PE) format with subdivisions that include an MS-DOS header, wherein the firmware module was produced by operations comprising:

merging .text, .data, and .rdata~~two~~ sections, each including a header, from an object file into one new section of a firmware module, wherein the new section includes a first name, data, executable code, and no more than a single header, follows the portable executable (PE) format having subdivisions that include the MS-DOS header;

renaming the new section to a second name that contains fewer unique characters than the first name; and

flattening the firmware module by replacing existing content within at least one field within the MS-DOS header of the firmware module with fill data that is more compressible than the existing content.

Claim 31: (canceled)

The following is an examiner's statement of reasons for allowance:

The closest prior art ("Microsoft Portable Executable and Common Object File Format Specification"; US 5,901,310 to Rahman et al.; US 6,243,421 to Nakajima et al.) teaches:

merging a plurality of sections, each including a header, from an object file into one new section of a firmware module (Section 4.2. Grouped Sections 2nd - 3rd par.

"When determining the image section that will contain the contents of an object section,

Art Unit: 2193

the linker discards the "\$" and all characters following it. Thus, an object section named .text\$X will actually contribute to the .text section in the imagetext&X will end up together, after the .text\$W"), wherein (a) the new section includes data, executable code, and no more than a single header (Section 1, in the 'Section' row of the table, "all code can be combined within a single section ... With more sections there is more file overhead ... All the raw data in a section must be loaded contiguously"; note that additional headers in the "Grouped Sections" of Section 4.2 would not conform to the PE specification and thus are assumed not to be present) and (b) the firmware module follows a portable executable (PE) format having subdivisions that include an MS-DOS header;

storing the firmware module in memory, wherein the stored module includes the new section, another section including relocation information, and no additional section (Section 1, in the 'Section' row of the table, "all code can be combined within a single section ... an image file can contain a number of sections, such asreloc"); and

flattening the firmware module by replacing existing content within at least one field within the MS-DOS header of the firmware module with fill data that is more compressible than the existing content (Rahman col. 1, lines 48-51 "storing the firmware in compressed form"; Nakajima col. 6, lines 22-25 "filling a given area with 0s and its compressed, reduced form is saved ... which can hence be decreased in the storage size.").

Art Unit: 2193

The closest prior art does not disclose merging a .text, .a .data, and an .rdata section and renaming the new section with fewer characters.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON MITCHELL whose telephone number is (571)272-3728. The examiner can normally be reached on Monday-Thursday and alternate Fridays 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bullock Lewis can be reached on (571) 272-3759. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2193

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jason Mitchell/
Primary Examiner, Art Unit 2193